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A-9837E
PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of:

Lars Ivar SAMUELSON et al.

Appln. No.: 10/613,071

Group Art Unit: 2811

Filed: July 7, 2003

Examiner: J. Jackson

For: NANOSTRUCTURES AND METHODS FOR MANUFACTURING
THE SAME

SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT

Commissioner of Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Pursuant to 37 C.F.R. § 1.56, and without any assertion as to materiality or prior art effect, the documents listed on the attached Form PTO-1449 are hereby cited.

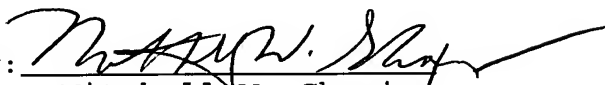
The Commissioner is hereby authorized to charge to Deposit Account No. 50-1165 any fees under 37 C.F.R. §§ 1.16 and 1.17 that may be required by this paper and to credit any overpayment to that Account. If any extension of time is required in connection with the filing of this paper and has not been requested separately, such extension is hereby requested.

Respectfully submitted,

MWS:lmb

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By:


Mitchell W. Shapiro
Reg. No. 31,568

December 30, 2004

FORM PTO-1449 INFORMATION DISCLOSURE STATEMENT LIST OF DOCUMENTS CITED BY APPLICANT				Atty. Docket No. A-9837E		Appln. No. 10/613,071	
<div style="position: relative; width: 100px; height: 100px; margin: auto;"> <div style="position: absolute; top: 0; left: 0; transform: rotate(-45deg); font-weight: bold;">TYPE</div> <div style="position: absolute; bottom: 0; right: 0; transform: rotate(45deg); font-weight: bold;">DEC 30 2004</div> </div>				Applicant Lars Ivar SAMUELSON et al.			
				Filing Date July 7, 2003		Group 2811	
U.S. PATENT DOCUMENTS							
Examiner Initial	Document Number	Date	Name	Class	Sub-class	Filing Date	
TA	2003/0200521	10/23/03	DeHon et al.	716	16		
TB	5,544,617	8/13/96	Terui et al.	117	87		
TC	5,858,862	1/12/99	Westwater et al.	438	503		
TD	5,976,957	11/2/99	Westwater et al.	438	478		
TE	6,130,142	10/10/00	Westwater et al.	438	478		
TF	6,130,143	10/10/00	Westwater et al.	438	478		
TG	2003/0121764	7/3/03	Yang et al.	200	262		
TH	2002/0129761	9/19/02	Takami	117	73		
TI	2002/0172820	11/21/02	Majumdar et al.	428	357		
FOREIGN PATENT DOCUMENTS							
Examiner Initial	Document Number	Date	Country	Class	Sub-class	Translation	
TI	02/48701	6/20/02	WIPO				
TJ	02/17362	2/28/02	WIPO				
TK	03/053851	7/3/03	WIPO				
TL	03/063208	7/31/03	WIPO				
TM	0 443 920	8/28/91	Europe			abstract	
TN	2000-068493	3/3/00	Japan			abstract	
TO	0 838 865	4/29/98	Europe				
OTHER (including author, title, date, pertinent pages, etc.)							
	TP	O'Regan et al., "A Low-Cost, High-Efficiency Solar Cell Based on Dye-Sensitized Colloidal TiO ₂ Films", <u>Nature</u> , Vol. 353, October 24, 1991, pp. 737-740.					
	TQ	Jun et al., "Architectural Control of Magnetic Semiconductor Nanocrystals", <u>J. Am. Chem. Soc.</u> , Vol. 124, No. 4, January 4, 2002, pp. 615-619.					
	TR	Manna et al., "Synthesis of Soluble and Processable Rod-, Arrow-, Teardrop-, and Tetrapod-Shaped CdSe Nanocrystals", <u>J. Am. Chem. Soc.</u> , Vol. 122, No. 51, December 1, 2000, pp. 12700-12706.					
	TS	Huang et al., "Directed Assembly of one-dimensional nanostructures into functional networks", <u>Science</u> , Vol. 291, January 26, 2001, pp. 630-633.					
EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.							

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				Applicant			
				Lars Ivar SAMUELSON et al.			
				Filing Date		Group	
				July 7, 2003		2811	
U.S. PATENT DOCUMENTS							
Examiner Initial		Document Number	Date	Name	Class	Sub-class	Filing Date
	UA	5,899,734	5/4/99	Lee	438	584	
	UB	2002/0175408	11/28/02	Majumdar et al.	257	734	
	UC	6,559,468	5/6/03	Kuekes et al.	257	14	
	UD	2002/0130311	9/19/02	Lieber et al.	257	1	
	UE	2003/0089899	5/15/03	Lieber et al.	257	9	
	UF	2004/0213307	10/28/04	Lieber et al.	372	39	
	UG						
	UH						
	UI						
FOREIGN PATENT DOCUMENTS							
Examiner Initial		Document Number	Date	Country	Class	Sub-class	Translation
	UI						
	UJ						
	UK						
	UL						
	UM						
	UN						
	UO						
	UP						
	UQ						
OTHER (including author, title, date, pertinent pages, etc.)							
	UN	Persson, "Heterointerfaces in III-V semiconductor nanowhiskers", <u>IEEE</u> , 2002, pp. 281-293.					
	UO	Gao et al., "Self-Assembled Nanowire-Nanoribbon Junction Arrays of ZnO", <u>The Journal of Physical Chemistry</u> , Vol. 106, No. 49, November 12, 2002, pp. 12653-12658.					
	UP	Yan et al., "Dendritic Nanowire Ultraviolet Laser Array", <u>J. Am. Chem. Soc.</u> , Vol. 125, March 29, 2003, pp. 4728-4729.					
	UQ	Jun et al., "Controlled Synthesis of Multi-Armed CdS Nanorod Architectures Using Monosurfactant System", <u>J. Am. Chem. Soc.</u> , Vol. 123, May 5, 2001, pp. 5150-5151.					
	UR	Poole et al., "Spatially Controlled, Nanoparticle-Free Growth of InP Nanowires", <u>Applied Physics Letters</u> , Vol. 83, No. 10, September 8, 2002, pp. 2055-2057.					
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Examiner Initial		Document Number	Date	Name	Class	Sub-class	Filing Date
	VA						
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	VC						
	VD						
FOREIGN PATENT DOCUMENTS							
Examiner Initial		Document Number	Date	Country	Class	Sub-class	Translation
	VE						
OTHER (including author, title, date, pertinent pages, etc.)							
	VF	Hiruma et al., "Quantum Size Microcrystals Grown Using Organometallic Vapor Phase Epitaxy", <u>Appl. Phys. Lett.</u> , Vol. 59, No. 4, July 22, 1991, pp. 431-433.					
	VG	Xia et al., "One-Dimensional Nanostructures: Synthesis, Characterization, and Applications", <u>Adv. Mater.</u> , Vol. 15, No. 5, March 4, 2003, pp. 353-389.					
	VH	Ozaki et al., "Silicon Nanowhiskers Grown on a Hydrogen-Terminated Silicon {111} Surface", <u>Applied Physics Letters</u> , Vol. 73, No. 25, December 21, 1998, pp. 3700-3702.					
	VI	Wu et al., "Growth, Branching, and Kinking of Molecular-Beam Epitaxial <110> GaAs Nanowires", <u>Applied Physics Letters</u> , Vol. 83, No. 16, October 20, 2003, pp. 3368-3370.					
	VJ	Grätzel, "Photoelectrochemical Cells", <u>Nature</u> , Vol. 414, November 15, 2001, pp. 338-344.					
	VK	Wang et al., "Nanocrystals Branch Out", <u>Nature Materials</u> , Vol. 2, June 2003, pp. 385-386.					
	VL	Manna et al., "Controlled Growth of Tetrapod-Branched Inorganic Nanocrystals", <u>Nature Materials</u> , Vol. 2, June 2003, pp. 382-385.					
	VM	Oda et al., "Natural Formation of Square Scale Structures on Patterned Vicinal Substrates by MOVPE: Application to the Fabrication of Quantum Structures", <u>Inst. Phys. Conf. Ser.</u> , No. 166, Chapter 4, August 22, 1999, pp. 191-194.					
	VN	Hayakawa et al., "AlGaAs Nano-Meter Scale Network Structures Fabricated by Selective Area MOVPE", <u>Inst. Phys. Conf. Ser.</u> , No. 162, Chapter 8, October 12, 1998, pp. 415-419.					
	VO	Akabori et al., "Selective Area MOVPE Growth of Two-Dimensional Photonic Crystals Having an Air-Hole Array and its Application to Air-Bridge-Type Structures", <u>Physica E</u> , No. 13, 2002, pp. 446-450.					
	VP	Kempa et al., "Photonic Crystals Based on Periodic Arrays of Aligned Carbon Nanotubes", <u>Nano Letters</u> , Vol. 3, No. 1, November 19, 2002, pp. 13-18 (published on web November 19, 2002).					
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	WA						
	WB						
	WC						
	WD						
FOREIGN PATENT DOCUMENTS							
Examiner Initial		Document Number	Date	Country	Class	Sub-class	Translation
	WE						
OTHER (including author, title, date, pertinent pages, etc.)							
	WF	McAlpine et al., "Nanoimprint Lithography for Hybrid Plastic Electronics", <u>Nano Letters</u> , Vol. 3, No. 4, March 7, 2003, pp. 443-445.					
	WG	Bozovic et al., "Plastic Deformation in Mechanically Strained Single-Walled Carbon Nanotubes", <u>Physical Review B</u> , Vol. 67, January 22, 2003, pp. 033407-1 - 033407-4.					
	WH	Lieber, "Nanoscale Science and Technology: Building a Big Future from Small Things", <u>MRS Bulletin</u> , July 2003, pp. 486-491.					
	WI	Yu et al., "Silicon Nanowires: Preparation, Device Fabrication, and Transport Properties", <u>J. Phys. Chem. B</u> , Vol. 104, No. 50, November 23, 2000, pp. 11864-11870.					
	WJ	Law et al., "Photochemical Sensing of NO ₂ with SnO ₂ Nanoribbon Nanosensors at Room Temperature", <u>Angew. Chem. Int. Ed.</u> , Vol. 41, No. 13, 2002, pp. 2405-2408.					
	WK	Lao et al., "Hierarchical ZnO Nanostructures", <u>Nano Letters</u> , Vol. 2, September 13, 2002, pp 1287-1291.					
	WL	Barrelet et al., "Synthesis of CdS and ZnS Nanowires Using Single-Source Molecular Precursors", <u>J. Am. Chem. Soc.</u> , Vol. 125, 2003, pp. 11498-11499.					
	WM	Hornstra, "Dislocations in the Diamond Lattice", <u>J. Phys. Chem. Solids</u> , Vol. 5, January 1, 1958, pp. 129-141.					
	WN	Krost et al., "InP on Si(111): Accommodation of Lattice Mismatch and Structural Properties", <u>Appl. Phys. Lett.</u> , Vol. 64, No. 7, February 7, 1994, pp. 769-771.					
	WO	Gorbach et al., "Growth of III-V Semiconductor Layers on Si Patterned Substrates", <u>Thin Solid Films</u> , Vol. 336, 1998, pp. 63-68.					
	WP	Kawanami, "Heteroepitaxial Technologies of III-V on Si", <u>Solar Energy Materials & Solar Cells</u> , Vol. 66, 2001, pp. 479-486.					
	WQ	Westwater et al., "Growth of Silicon Nanowires Via Gold/Silane Vapor-Liquid-Solid Reaction", <u>J. Vac. Sci. Technol. B</u> , Vol. 15, No. 3, 1997, pp. 554-557.					
	WR	Kamins et al., "Ti-Catalyzed Si Nanowires by Chemical Vapor Deposition: Microscopy and Growth Mechanisms", <u>Journal of Applied Physics</u> , Vol. 89, No. 2, January 15, 2001, pp. 1008-1016.					
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	XA						
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FOREIGN PATENT DOCUMENTS							
Examiner Initial		Document Number	Date	Country	Class	Sub-class	Translation
	XE						
OTHER (including author, title, date, pertinent pages, etc.)							
	XF	Thornton et al., "A Photoemission Study of Passivated Silicon Surfaces Produced by Etching in Solutions of HF", <u>Semicond. Sci. Technol.</u> , Vol. 4, 1989, pp. 847-851.					
	XG	Westwater et al., "Si Nanowires Grown Via the Vapour-Liquid-Solid Reaction", <u>Phys. Stat. Sol.</u> , Vol. (a)165, 1998, pp. 37-42.					
	XH	Westwater et al., "The Characteristics and Oxidation of Vapor-Liquid-Solid Grown Si Nanowires", <u>Mat. Res. Soc. Symp. Proc.</u> , Vol. 452, 1997, pp. 237-242.					
	XI	Westwater et al., "Nanoscale Silicon Whiskers Formed by Silane/Gold Reaction at 335°C", <u>Materials Letters</u> , Vol. 24, June 1995, pp. 109-112.					
	XJ	Yang, "Semiconductor Nanowire Array", <u>Proceedings of the SPIE</u> , Vol. 4806, 2002, pp. 222-224.					
	XK	Abramson et al., "Nanowire Composite Thermoelectric Devices", <u>Proceedings of IMECE2002, ASME International Mechanical Engineering Congress & Exposition</u> , November 17-22, 2002, pp. 7-11.					
	XL	Johnson et al., "Single Nanowire Waveguides and Lasers", <u>Proceedings of SPIE</u> , Vol. 5223, 2003, pp. 187-196.					
	XM	Greene et al., "Low-Temperature Wafer-Scale Production of ZnO Nanowire Arrays", <u>Angew. Chem. Int. Ed.</u> , Vol. 42, 2003, pp. 3031-3034.					
	XN	Choi et al., "Self-Organized GaN Quantum Wire UV Lasers", <u>J. Phys. Chem. B.</u> , Vol. 107, 2003, pp. 8721-8725.					
	XO	Samuelson et al., "Fabrication and Spectroscopic Studies of InP/GaInAs/InP and GaAs/GaInAs/GaAs Quantum-Well Wire Structures", <u>Inst. Phys. Confer. Ser.</u> No. 127, Chapter 3, January 1, 1992, pp. 95-98.					
	XP	Samuelson et al., "Fabrication and Imaging of Quantum Well Wire Structures", <u>SPIE</u> , Vol. 1676, 1992, pp. 154-160.					
	XQ	Ramvall et al., "Quantized Conductance in a Heterostructurally Defined Ga _{0.25} In _{0.75} As/InP", <u>Appl. Phys. Lett.</u> , Vol. 71, August 18, 1997, pp. 918-920.					
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	YA						
	YB						
	YC						
	YD						
FOREIGN PATENT DOCUMENTS							
Examiner Initial		Document Number	Date	Country	Class	Sub-class	Translation
	YE						
OTHER (including author, title, date, pertinent pages, etc.)							
	YF	Ng et al., "Growth of Epitaxial Nanowires at the Junctions of Nanowalls", <u>Science</u> , Vol. 300, May 23, 2003, p. 12.					
	YG	Björk et al., "Heterostructures in One-Dimensional Nanowires", <u>Proceedings of 7th International Conference of Nanometer-Scale Science and Technology and 21st European Conference on Surface Science</u> , June 24, 2002.					
	YH	Ohlsson et al., "Comparison Between (III)B and (100)III-V Nanowhiskers", <u>Proceedings of 7th International Conference of Nanometer-Scale Science and Technology and 21st European Conference on Surface Science</u> , June 24, 2002.					
	YI	Larsson et al, "In-Situ Manipulations and Electrical Measurements of III-V Nanowhiskers with TEM-STM, <u>Proceedings of 7th International Conference of Nanometer-Scale Science and Technology and 21st European Conference on Surface Science</u> , June 24, 2002.					
	YJ	Lieber et al., "Nanowires as Building Blocks for Nanoelectronics and Nanophotonics", <u>Electron Devices Meeting 2003 IEEE International</u> , 2003, pp. 12.3.1-12.3.3.					
	YK	Ohlsson et al., "Anti-Domain-Free GaP, Grown in Atomically Flat (001) Si Sub- μ m-sized Openings", <u>Applied Physics Letters</u> , Vol. 80, No. 24, June 17, 2002, pp. 4546-4548.					
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